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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,704	08/22/2003	Marco Morra	7883.0043-01	9303

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EXAMINER

NAKARANI, DHIRAJLAL S

ART UNIT PAPER NUMBER

1773

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/645,704

Applicant(s)

MORRA ET AL.

Examiner

D. S. Nakarani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/18/2006</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 requires the species "PHB". The Examiner is not clear what "PHB" is. This chemical should be spelled out in the claim for clarity. Additionally, upon review of the specification, the Examiner has found a reference to "PHMB" which is a bactericide "polyhexamethylenebiguanide". It is not clear if applicants have intended to claim "polyhexamethylenebiguanide (PHMB)".

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19-24, 27, 28 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Dang et al (U. S. Patent 6,159,531).

Dang et al disclose a method for surface modification of medical device (Abstract). Dang et al provide such device and treat its surface by exposing to a reactive gas, such as ammonia, amine, vinyl, acrylated compound, acrylic acid etc. and plasma energy to deposit a coating on the surface (Col. 2, line 39 to col. 3, line 6). Dang et al disclose that after treatment with the reactive gas, the radiofrequency power is turned off and the reactive gas is permitted to continue flowing, thus reducing the free radicals present in the chamber (Col. 5, lines 49-53), allowing more reactive groups to remain on the surface (Col. 3, line 5). Thus continuation of reactive gas flow after the completion of the plasma treatment, meets claimed quenching the device with reactive gas. Dang et al disclose prior to the plasma deposition step, step of exposing device to air and plasma energy to clean the surface (Col. 2, lines 39-43). Dang et al are using plasma chamber for their plasma treatments and infuse a flow of gas into the plasma chamber (Col. 2,

lines 45-46). Dang et al's reactive gas such vinyl alcohol, allyl alcohol, unsaturated hydrocarbons etc. are deemed to be polymerisable unless shown otherwise. Dang et al disclose, after plasma deposition, a step of surface grafting a material to the deposited surface (Col. 4, lines 5-45). Dang et al disclose attachment of a surface reactant species such as cell adhesion proteins, anti-coagulant coating with heparin etc to the surface graft (Col. 4, line 66, Figure 1 and col. 5, lines 12 and 23).

6. Claims 25, 26, 29, 30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dang et al (U. S. Patent 6,159,531) in view of Cahalan et al (U. S. Patent 5,782,908).

Dang et al which have been discussed above in paragraph 5 fails to disclose claimed acrylic acid and acrylamide as surface graft material and claimed surface reactant species collagen and PHB and claimed time period of exposure to surface graft material after the quenching step.

Cahalan et al disclose grafting surface of plasma deposited layer with acrylamide, acrylic acid etc for attachment of biomolecule such as heparin, collagen etc. (Col.5, line16 to col. 6, line 1).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of this invention made to utilize disclosure of Cahalan et al in the invention of Dang et al to use acrylic acid or acrylamide as grafting material with the expectation of successful results. Regarding specific length of time that must elapse after quenching and prior to the surface graft step, it is the Examiner's position that determination of

such a variable would have been within the skill of an ordinary artisan. Oftentimes, plasma operations are done in batches in specific equipment and it would be reasonable for an ordinary artisan to allow a certain amount of time to pass before the solution based grafting step can be set-up and performed.

No claims are allowed.

7. Receipt of Information Disclosure Statement filed January 18, 2006 is acknowledged and all recited documents have been made of record.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. S. Nakarani whose telephone number is (571) 272-1512. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



D. S. Nakarani  
Primary Examiner  
Art Unit 1773

DSN  
June 12, 2006.